Welding

USSR

UDC 621.791.052.01:669.295

KOLACHEV, B. A., Doctor of Technical Sciences, MAKONOVA, F. S., Engineer, ARTSYBASOV, YU. K., Engineer, SHCHENNIKOVA, A. YE., Engineer, and GORSHKOV, YU. V., Engineer

"Effect of Expansion and Vacuum Annealing on Residual Stresses in Welded OT4-1 Alloy Joints"

Abstract: The effect of expansion and vacuum annealing on residual stresses of the first and second types across the weld seam and over the thickness of the weld seam were investigated on specimens of 2-mm-thick OT4-1 alloy sheet material. The stress distributions are analyzed by reference to diagrams. Tensile stresses of the first type act in the metal of the seam immediately after welding; they are maximum on the initial metal -- seam boundary and they change to compression stresses 6 mm from the seam center. Expansion decreases of the first type, and vacuum annealing eliminates them completely. Residual stresses of the second type on the order of 10 kg/mm², act immediately after welding in the weld joint; the microstresses of the weld joint are only slightly affected by expansion, but they decrease significantly with vacuum annealing. The decrease of residual stresses as a result of expansion and vacuum annealing decreases the tendency of welded joints to develop cracks. Four figures, three bibliographic references.
1/1

KOLACHEV, B. A., GORSHKOV, Yu. V., SHEVCHENKO, V. V., ARTSYBASOV, Yu. N.

"Structure and Properties of OT4 and OT4-1 Alloys Following Vacuum Annealing"

Abstract: Removal of hydrogen from a metal by vacuum annealing is the most
radical means of preventing hydrogen embrittlement. However, the surface of
vacuum-treated metal is quite active and interacts with water vapor even at
room temperature. The present article studied the influence of temperature
and duration of vacuum annealing on the structure and properties of OT4 and
OT4-1 alloys. The chemical composition of the alloys corresponded to the tech-
nical conditions. The studies were performed using bars 15 mm in diameter and
sheets 1-3 mm thick. It was found that vacuum annealing does decrease
hydrogen embrittlement of OT4-1 alloy. Vacuum annealing improves the mechan-
ical characteristics of OT4 alloy tested with stress concentrators, but worsens
the mechanical characteristics of OT4-1 alloy under these same conditions. It
is recommended that vacuum annealing be performed at 670°C for two hours with
subsequent oxidation of the surface of the sheets by allowing air into the
system at 300-400°C.

1/1

USSR   UDC 669.295.5.018.29:[620.186 + 539.56]:669.78

KOLACHEV, B. A., GORSHKOV, Yu. V., BUKHANOVA, A. A., SEDOV, V. I., and
SHEVCHENKO, V. V.

"Influence of Hydrogen on the Structure and Properties of Titanium Alloy
OT4-1"

Translation: Impact tests and tests according to the Troyano method (test
basis: 500 days) showed that a hydrogen concentration $< 0.005\%$ is safe for
alloy OT4-1. Threshold stresses decline with an increase in hydrogen con-
tent and at concentrations of 0.02-0.1% amount to 30 kg/mm^2 given a test
basis of 500 days. The tendency of the alloy toward hydrogen embrittlement
intensifies with a drop in test temperature. Alloy OT4-1 with an acicular
structure is more prone to hydrogen embrittlement than that with a granular
phase form. Eight illustrations. Bibliography of five titles.

1/1

USSR   UDC 576.851.511.01(571.53)

GORSHKOV, Yu. Ye., Irkutsk Oblast Sanitary Epidemiological Station

"A Case of Isolation of B. anthracis From Microtus oeconomus"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71,
p 144

Abstract: Meadows surrounding the Uda River in Nizhneudinskiy Rayon have well-
drained soil, are covered with various types of grass, and are bordered with
willow grones along the river banks. In August 1967, during a routine inspec-
tion of the rodents inhabiting these meadows, seven field mice and five root
voles (Microtus oeconomus) were caught. Tissue samples for bacteriological
investigations were collected in a sterile manner, separately from mice and
voles, and were stored in a preservative (glycerine and distilled water) in a
cool place. Bioassays were performed in September. White mice receiving
liver and spleen homogenates from the field mice developed no pathology. How-
ever, white mice given similar homogenates from the root voles died, and the
anthrax bacillus was isolated from them. The conclusion is drawn that meadows
along the Uda River have local foci of anthrax bacilli, whose spores survive
in the soil and are ingested by the voles together with plant roots and bulbs.

1/1

1/2   009   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--COMPOSITION OF FATLIKE SUBSTANCES IN THE WATER OF BAROMETRIC,
 CONDENSER, WELLS -U-
AUTHOR-(03)-ZAMYSHLYAYEVA, A.M., TSYGANKOVA, G.P., GORSHKOVA, E.I.

COUNTRY OF INFO--USSR

SOURCE--MASLO-ZHIR. PROM. 1970, 36(3), 18

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--HYDROGENATION, FATTY ACID, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0970   STEP NO--UR/9085/70/036/003/0018/0018

CIRC ACCESSION NO--AP0133056
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0133056
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE FATLIKE WASTES FROM
  DEODORIZATION OF HYDROGENATED FATS CONTAIN 48.1PERCENT H SUB2 O AND
  51.7PERCENT ORG. COMPDS. THE ORG. FRACTION CONTAINED FATTY ACIDS
  (MYRISTIC 7.1, PALMITIC 18.9, STEARIC 17.2, OLEIC 18.5, AND LINOLEIC
  16.2) AND 22.1PERCENT OXION. PRODUCTS AND UNDEFINED COMPDS.
  FACILITY: KIEV. TEKHNOL. INST. PISHCH. PROM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.371.029.55

VSEKHOSVYATSKAYA, I. S., GLADYSHEVA, M. V., GORSHENEVA, E. Z.,
DUMBRAVA, Z. F., YEROFEYEV, N. M., ZOLOTAREV, K. Ye., KIYANOVSKIY,
M. P., MAL'SHAKOV, V. N., NOVIKOVA, L. N., PEZHEMSKAYA, M. D.,
PODDEL'SKIY, N. I., and RUDYKA, L. V.

"Some Results of Investigations Into Tilted Short-Pulse Sounding
in Ranges up to 400 km Long"

Translation: Results are given of the selection of optimal operat-
ing frequencies for ranges of varying extent, the identification
of propaganda modes, and the determination of the spectral char-
acteristics of the fluctuations in signal level. A. L.

1/1

1/2   022   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF THE BASICITY OF N SUBSTITUTED LACTAMS BY AN IR
   SPECTROSCOPIC METHOD -U-
AUTHOR-(05)-GORSHKOVA, G.N., KOLODKIN, F.L., POLISHCHUK, V.V.,
   PONOMARENKO, V.A., SIDELKOVSKAYA, F.P.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 550-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LACTAM, IR SPECTRUM, PHENOL, DEUTERIUM COMPOUND, HYDROXYL
   RADICAL, DETONE, PYRROLES, HETEROCYCLIC NITROGEN COMPOUND,
   CYCLOHEXANONE, SOLUTION ALKALINITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0741   STEP NO--UR/0062/70/000/003/0550/0554

CIRC ACCESSION NO--AP0124411
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0124411
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA WERE USED TO ASSESS THE
  VALUES OF THE ASSOCN. CONSTS. OF THE FOLLOWING COMPDS. WITH PHOH, FROM
  THE VALUES OF SPECTRAL SHIFTS OF OH AND OD BANDS (VALUES OF K SUBASS IN
  L.-MOLE SHOWN): PYRROLIDONE 160, N,METHYLPYRROLIDONE 175,
  N,(2,3,EPOXYPROPYL)PYRROLIDONE 140, N,ALLYLPYRROLIDONE 135,
  N,VINYLPYRROLIDIONE 48, PIPERIDONE 225, N,ALLYLPIPERIDONE 180,
  N,VINYLPIPERIDONE 52, CAPROLACTAM 185, N,ALLYLCAPROLACTAM 145,
  N,VINYLCAPROLACTAM 49, PYRROLIDINE 185, PIPERIDINE 170, CYCLOPENTANONE
  11, AND CYCLOHEXANONE 12. THUS, A RELATION OF BASICITY OF THESE COMPDS.
  TO THE NATURE OF THE N SUBSTITUTENT WAS DEMONSTRATED.   THE ASSOCN. OF
  PHOH WITH THESE RING SYSTEMS AT THE CARBONYL GROUP DOES NOT EXCLUDED THE
  POSSIBLITY OF ASSOCN. AT THE N ATOM.   FACILITY: INST. ORG. KHIM.
  IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--DETERMINATION OF THE COMPOSITION OF THREE COMPONENT COPOLYMERS
   CONTAINING HALO SUBSTITUTED STYRENE, STYRENE, AND DIENE -U-
AUTHOR-(03)-GORSHKOVA, I.A., PITERKIN, B.D., DOKUKINA, A.F.

CCUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 106-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMER, STYRENE, DIENE, BUTADIENE, FLUORINATED ORGANIC
   COMPOUND, ISOPRENE, UV SPECTRUM

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0976   STEP NO--UR/0153/70/013/001/0106/0109

CIRC ACCESSION NO--AP0124635
                     UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124635
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF SEVERAL TERNARY
   COMPOLYMERS, E.G., STYRENE (I),BUTADIENE
   (II),ALPHA,BETA,BETA,TRIFLUOROSTYRENE (III), I,ISOPRENE,III,
   ALPHA,BETA,DIFLUORO,BETA,CHLOROSTYRENE,I,II, AND
   P,PHENYL,ALPHA,BETA,BETA,TRIFLUOROSTYRENE,I,II, WAS DETD. BY UV
   SPECTRUSCOPY AT 240-80 NM. THE ANAL. WAS RAPID AND ACCURATE.
   FACILITY: LENINGRAD. POLITEKH. INST. IM. KALININA, LENINGRAD, USSR.

UNCLASSIFIED

USSR   UDC 533.9.15

GORSHKOVA, L. D., GORSHKOV, V. A., and PODMOSHENSKIY, I. V.

"Determining the Radiation Power of a Plasma from Nonconducting
Materials"

Abstract: The basic difficulty in the way of obtaining quantita-
tive data concerning the radiation of a low-temperature plasma
from nonconducting materials is getting a plasma with a con-
trolled chemical composition, pressure, and temperature. A more
promising plasma source is a powerful discharge pressed against
a dielectric wall by a magnetic field specially developed for
this purpose. The paper discusses this better method of producing
a plasma, known as the H-pressed discharge method. It begins
with an examination of the correspondence between the atomic
chemical state of the plasma and the vaporized nonconducting
material against which the discharge is pressed. Under the con-
dition of the H-pressed discharge method the plasma is character-
ized by a quasi-stationary, stable radiation; temperature uni-
formity along the discharge axis; and known values of temperature
1/2

USSR

GORSHKOVA, L. D., et al, Zhurnal Prikladnoy Spektroskopii, Vol.
12, No. 1, Jan 1970, pp 8-12

and pressure. Hence, the use of such a source for the study and
measurement of the radiative power from a plasma of various
materials is the most promising. The authors describe measure-
ments they made of the radiating capability of such plasmas;
their method was the ballistic method, in which a vacuum inertial
thermocouple combined with a mirror galvanometer or a photo-
electric amplifier is used as the radiation energy sensor.

2/2

TITLE--DETERMINATION OF THE RADIATIVE CAPACITY OF A PLASMA OBTAINED FROM
   NONCONDUCTING MATERIALS -U-

AUTHOR-(03)-GORSHKOVA, L.D., GORSHKOV, V.A., PUDMOSHENSKIY, L.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, JAN. 1970, P. 8-12

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DIELECTRIC MATERIAL, ELECTRIC DISCHARGE, DISCHARGE PLASMA,
   PLASMA RADIATION, PLASMA MEASUREMENT, OPTIC BRIGHTNESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1978/1215   STEP NO--UR/0363/70/012/000/0008/0012

CIRC ACCESSION NO--AP0045138
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0046138

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   DESCRIPTION OF A TECHNIQUE FOR THE
  PRODUCTION OF PLASMAS FROM ORGANIC GLASS, POLYETHYLENE, QUARTZ AND OTHER
  NONCONDUCTING MATERIALS BY USING PULSED DISCHARGES IN THE PRESENCE OF A
  MAGNETIC FIELD.   STEADY AND HOMOGENEOUS RADIATION WAS OBTAINED ALONG THE
  DISCHARGE AXIS WHEN THE DURATION OF THE PULSE WAS ROUGHLY 1 MU SEC.   IT
  IS ALSO FOUND THAT THE ATOMIC COMPOSITION OF THE FLAME CORRESPONDS TO
  THE CHEMICAL COMPOSITION OF THE MATERIAL USED.   A BALLISTIC TECHNIQUE
  AND A VACUUM THERMOCOUPLE WERE USED IN MEASURING THE INTEGRAL PLASMA
  BRIGHTNESS IN THE 200 TO 2000 NM RANGE.   NUMERICAL VALUES OF PLASMA
  BRIGHTNESS AT TEMPERATURES FROM 12,000 TO 16,000 DEG K ARE GIVEN FOR A
  GROUP OF NONCONDUCTING MATERIALS.

GORSHKOVA, M.A.   Biology

DIAGNOSIS OF THE MINERAL NUTRITION OF PLANTS

(Conference in Moscow)

- 164 -

UNCLASSIFIED   PROCESSING DATE--20NOV7C

1/3   ·016
TITLE--USE OF THE ANALYTICAL GEOMAGNETIC FIELD IN A STUDY OF MAGNETIC
  ANOMALIES -U-
AUTHOR-(04)-BENKOVA, N.P., GORSHKOVA, T.A., SIMONENKO, T.N., TYURMINA,
  L.O.
CCUNTRY UF INFC--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NC 3, 1970, PP 505-512

DATE PUBLISHED------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MAGNETIC ANOMALY, GEOMAGNETIC FIELD, MAP

CCNTRLL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3905/0504   STEP NO--UR/0203/70/010/003/0505/0512

CIRC ACCESSION NO--APC132709
                              UNCLASSIFIED

2/3   016
CIRC ACCESSION NO--AP0132709
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANALYTICAL REPRESENTATION OF
THE GEOMAGNETIC FIELD IS CLOSELY RELATED TO THE PROBLEMS INVOLVED IN
MAGNETIC CARTOGRAPHY. IT CAN BE USED BOTH FOR REPRESENTING THE MAIN
GEOMAGNETIC FIELD AND AS A NORMAL FIELD FOR STANDARDIZING MAPS OF
MAGNETIC ANOMALIES. THE PROBLEM OF THE NORMAL FIELD IN GENERAL AND THE
NORMAL FIELD REPRESENTED BY SPHERICAL HARMONIC SERIES HAS BEEN DEVELOPED
IN DETAIL BY BULLARD. THIS ARTICLE IS A FURTHER DEVELOPMENT OF SOME OF
HIS CONCLUSIONS, WITH WHICH THE AUTHORS ARE IN GENERAL FULLY IN
AGREEMENT. AS THE OBSERVED FIELD THE AUTHORS USED THE RESULTS OF
SURVEYS OF THE MODULUS OF TOTAL STRENGTH T, FREED FROM THE EFFECT OF
LOCAL ANOMALIES. THE ONLY SURVEYS EMPLOYED WERE THOSE MADE WITH PROTON
MAGNETOMETERS DURING THE LAST 5-10 YEARS. ALL THE EXPERIMENTAL DATA
FELL INTO TWO CATEGORIES: 1) MEASUREMENTS OF T ALONG MOST GROUND, OCEAN
AND AEROMAGNETIC PROFILES, REDUCED TO 1965 AND THE EARTH'S SURFACE.
CONTINUOUS T MEASUREMENTS ALONG THE PROFILES WERE FIRST SUBJECTED TO
MOVING AVERAGING WITH A BASE OF 400 KM AND A 5 KM INTERVAL; 2) MAPS OF
NORMAL FIELDS OF EXTENSIVE REGIONS COMPILED BY DIFFERENT METHODS USING
SURVEY DATA FOR THESE REGIONS. THE ACCURACY OF T VALUES IS ESTIMATED
FOR DIFFERENT REGIONS FROM 15 TO 50GAMMA. FIG. 1 IN THE TEXT SHOWS THE
GEOGRAPHICAL DISTRIBUTION OF PROFILES AND THE AREAS COVERED BY REGIONAL
MAPS. FIGS. 2 AND 3 SHOW DELTA T CURVES, THE DIFFERENCES BETWEEN
OBSERVED AND ANALYTICAL T VALUES. IT IS SHOWN THAT ANALYTICAL
EXPRESSION OF THE FIELD REPRESENTED BY THE SUM OF NINE HARMONICS CAN BE
USED AS THE NORMAL FIELD.

UNCLASSIFIED

3/3   016
CIRC ACCESSICN NO--AP0132709
ABSTRACT/EXTRACT--FIG. 5 IN THE TEXT IS THE AUTHORS' FINAL WORLD TO MAP
(THE MAXIMUM DELTA T VALUES USUALLY FALL TO THE SOUTH OF 40DEGREESS,
THAT IS, WHERE THE GREATEST GAPS IN MAGNETIC SURVEYING EXIST).
FACILITY: INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE
PROPAGATION.

UNCLASSIFIED

JPRS 560303
18 May 77

EFFECT OF SYNTHETIC CARBOHYDRATES ON RAT LIVER LYSOSOMES

Abstract: The effect of synthetic carbohydrates on rat liver lysosomes was examined. Since the carbohydrates were purified from contaminants they lost their toxicity for lysosomes.

One of the most important problems in medicine is the regeneration of food substances from the products of man's vital functions during prolonged space flights. In the laboratory carbon dioxide can be utilized through the stage of formaldehyde condensation, leading to the formation of 10-13 optically inactive monosaccharides, primarily pentoses and hexoses (Buterlerov, Akerlof; Pfeil and Ruckert; A. N. Bakh; Yu. Ye. Sinyak and V. A. Uspenskaya). It is not impossible that the racemates of carbon dioxide obtained as a result of this synthesis can serve as one of the sources of a diet for cosmonauts. Accordingly, it was necessary to conduct a toxicological investigation of these carbohydrates.

The toxicity of synthetic carbohydrates was studied in rat liver lysosomes, ultrafine structures of the cell measuring from 0.2 to 0.8 μ, containing hydrolytic enzymes. Cell hydrolases are morphologically separated by a lipoprotein membrane. An increase in permeability or the destruction of this membrane leads to a freeing of the enzymes, an increase in their activity in the cell, and therefore to one pathological state or another. Among the factors increasing the entry of lysosomal enzymes into the cell are many toxins, vitamins, antibiotics, exposure to transverse accelerations, etc. (Hershcheler and Schwartz; Tarnavski; A. M. Kharitonova and A. A. Avakyan; Kh. Kh. Planelyes, et al.). It was precisely the high sensitivity of lysosomes to exposure to different factors and their role in processes of a pathological or physiological dying out of cells that was the basis for selecting lysosomes as an object for studying the toxicological effect of synthetic carbohydrates.

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GORSHUNOVA, A. I.

INVESTIGATION OF VARIOUS POLYMER MATERIALS AS POTENTIAL CONSTRUCTION MATERIALS

Article by V. B. Gorshunova, A. I. Popov,
V. A. Bochkareva, S. S. Teletskiy, and
N. A. Platé; Moscow, *Kosmicheskaya Biologiya i
Meditsina*, Vol...

1. Block, Sheet and Granulated Plastics

During recent years there has been a considerable broadening of the field of applicability of plastics or construction materials (L. Buter, 1967). Corresponding to the wide types of the carbonates, polyamides and copolymers of the... 1969) have shown the greatest possibilities of use... reaction. The content of volatile substances... a substantial effect on their physicomechanical properties... toxicity (V. V. vyatroyskaya, V. V. Zapshin... bioskin, 1969). Accordingly, the purpose of this study was an investigation of the combination of a sample of... stances released by some block, sheet and granulated plastics under conditions simulating the external medium in the process of using polymer construction materials.

Experimental Part

We studied a group of block and granulated polymers including polycarbonate, polyamide, phenol-formaldehyde resin, polyacrylate and butadiene polymethyl methacrylate and butadiene polymer (ABS resin).

All the samples were investigated at normal... temperature and with an exposure of 10 days... of the material, other than pressed powder... the basis of ABS copolymer, was investigated at increased...

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GORSHUNOVA, A.I.
(A)

33

STUDY OF THE GAS EMANATION OF A NUMBER OF POLYMERS DURING
THEIR PROLONGED STORAGE

The polymers used for outfitting the cabin of a space-
ship can release into the surrounding atmosphere different
substances which are toxic to man. This gives rise to a neces-
sity for studying the qualitative and quantitative composi-
tion of the volatile substances released by polymers and for
predicting their gas emanations over long periods of time.

In this study we investigated the change in the quali-
tative and quantitative composition of gaseous products es-
caping into the surrounding medium from polymers during their
prolonged retention under natural conditions.

The literature contains data indicating that synthetic
materials are a source of prolonged (up to three-five year)
contamination of the atmosphere by harmful impurities...
Yekimova, et al., 1969; G. K. Benzing, 1967... Tsuchenko,
et al., 1969; L. M. Pinchuk, et al., 1969). In addition,
studies have been made pertaining to the dynamics of the gas
emanation process. For example, A. V. Bokov (1967, 1969) has
shown that the dependence of gas emanation of polymeric mate-
rials on the time of their use usually has an exponential na-
ture; that is, the concentration decrease in concentration of
the proposed formula for computing the change in concentration
of formaldehyde in a kindergarten room during a period of
time from nine to nineteen months after fabrication of the
materials.

According to data published by Y. Ya. Tsimberovskaya,
et al. (1969), during the first two or three months after the
fabrication of polymers there is a marked decrease in the

GORSHUNOVA, A.I.

SPRS 56,495

14 July 72

USSR

UDC 616.915-085.371-092.9

GORSHUNOVA, L. P., BEKTEMIROV, T. A., and KOSHTOYAN, S. YE., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and Chair of Virology, Central Institute of Advanced Training of Physicians, Ministry of Health USSR, Moscow

"Interferon Production and Nonspecific Protective Reactions in the Central Nervous System of Animals Vaccinated With Live Measles Vaccine"

Abstract: Immunization of white mice with live measles vaccine results in a prolonged production of endogenous interferon, not only in the reticulo-endothelial system but also in other organs. Within 72 hours of immuniza-tion, interferon concentration in the spleen and the lymph nodes is higher than in the blood serum for 15 days, while in the lungs and the brain it is even higher than in the reticuloendothelial system for 30 days. It was concluded that this local production of interferon is due to the attenuated measles virus entering the various organs and persisting in them for longer periods. The vaccinated animals also display an augmented, nonspecific resistance to intracerebral inoculation with neurovirulent herpes virus, which must be due to nonspecific protective reactions developing in the CNS in association with the local production of interferon.

1/1

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USSR

GORSHUNOVA, L. P., NABOKOVA, A. V., Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Changes in Sensitivity of the Organism to Heterologous Viral Infections After Immunization by Various Virus Vaccines. Report I. The Capacity of Live Poliovaccine and Vaccine Against Tickborne Encephalitis to Generate Resistance to Heterologous Viral Infections"

Abstract: In recent years, it has been established that vaccination enhances the sensitivity of the organism to various infections and toxic agents. White mice and rats were used in experiments to establish the extent to which live poliovaccine enhances antiviral resistance. After intramuscular vaccination, the test animals were infected with tickborne encephalitis virus or rabies virus. In the first test series, it was established that seven days after vaccination, the resistance of animals to tickborne encephalitis virus was increased. The death rate of mice in this series was 20% whereas that of control animals was 45%. Resistance increased up to the 20th day; by the 30th day resistance decreased and was almost at the initial level. The resistance to rabies was still high in white mice and rats for 45-60 days after injection of poliovaccine. The mortality rate was nine times

1/2

USSR

GORSHUNOVA, L. P. and NABOKOVA, A. V., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6, Jun 70, pp 83-86

lower than that of controls. By the 90th day, resistance dropped somewhat, but was still considerably higher than that of unvaccinated animals. In a third test series, it was shown that immunization of white mice with inactivated vaccine against tickborne encephalitis in combination with live poliovaccine increased the resistance to rabies. This was observed for the 15th through the 60th day after vaccination. The rabies mortality of animals vaccinated against tickborne encephalitis was 2-4 times lower than that of controls. The data obtained show that immunization by live poliovaccine and inactivated vaccine against tickborne encephalitis enhances the resistance of the organism to heterologous viral infections. The level and duration of this resistance are determined by the properties of the vaccine preparation used, and by the features of the particular heterologous virus infection.

2/2

1/2   021   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--CHANGES OF SENSITIVITY OF THE ORGANISM TO HETEROLOGOUS VIRAL
   INFECTIONS FOLLOWING IMMUNIZATION WITH VARIOUS VIRAL VACCINES. THE
AUTHOR-(02)-GORSHUNOVA, L.P., NABOKOVA, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
   PP 83-86
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POLIOMYELITIS, VACCINE, RABIES, IMMUNOLOGY, TICKBORNE
   ENCEPHALITIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--300 1/0420   STEP NO--UR/0016/70/000/006/0083/0086

CIRC ACCESSION NO--AP0126173
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0126173
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE INTRAMUSCULAR INJECTION OF
LIVING POLIOVACCINE OF P TYPE CAUSED THE STATE OF PROLONGED (FOR TWO AND
A HALF MONTHS) RESISTANCE TO RABIES, AND ONLY A SHORT LIVED (FOR TWO
WEEKS) ELEVATION OF RESISTANCE TO THE VIRUS OF TICK BORNE ENCEPHALITIS.
RABIES RESISTANCE ALSO DEVELOPED FROM THE 15TH TO THE 60TH DAY AFTER A
SINGLE SUBCUTANEOUS INJECTION OF INACTIVATED VACCINE AGAINST TICK BORNE
ENCEPHALITIS.   FACILITY: INSTITUT VIRUSOLOGII IM IVANOVSKOGO AMN
SSSR, MOSKVA.

UNCLASSIFIED

TITLE--SOLUBILITY IN THE LA, NO SUB3, SUB3-C SUB6 H SUB5 NH SUB2. HNO SUB3
   H SUB2 O SYSTEM -U-
AUTHOR-(02)-ZHURAVLEV, YE.F., GORSHUNOVA, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1422-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, LATHANUM COMPOUND, PHASE DIAGRAM, AMINE, NITRIC
   ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0954   STEP NO--UR/0078/70/015/005/1422/1424

CIRC ACCESSION NO--AP0137982
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0137982
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 25 AND 50DEGREES, THE TITLE
SYSTEM SHOWS EUTONIC (ISOTHERMAL INVARIANT) TYPE OF BEHAVIOR. MOST OF
THE PHASE DIAGRAM IN OCCUPIED BY THE C SUB6 H SUB5 NH SUB2. HNO SUB3
CRYSTN. FIELD. THE FIELD OF A LA(NO SUB3) SUB3. 6H SUB2 O IS QUITE
SMALL. LA(NO SUB3) SUB3 HAS A SALTING OUT EFFECT ON C SUB6 H SUB5 NH
SUB2. HNO SUB3. FACILITY: VORONEZH. POLITEKH. INST., VORONEZH,
USSR.

UNCLASSIFIED

Acc. Nr. *AP0034223*   Abstracting Service: Ref. Code

CHEMICAL ABST. 4- 7°   *UR 0078*

71191k Cosolubility of lanthanum nitrate and ethylenedi-
amine. Zhuravlev, E. F.; Gorsh___ V. P. (Voronezh. Poli-
tekh. Inst., Voronezh, ___ Zh. Neorg. Khim. 1970, 15(1),
195-200 (Russ). Soly. diagrams for La(NO$_3$)$_3$-en.2HNO$_1$-H$_2$O
system at 25 and 50° are constructed. The system has 3 solids:
en.2HNO$_3$, La(NO$_3$)$_3$.nH$_2$O, and en.2HNO$_3$.La(NO$_3$)$_3$.6H$_2$O.
The soly. curves cross in 2 eutonic points. The ternary compd.
of the system is congruently sol. and its most probable structure
is (CH$_2$NH$_3$)$_2$[La(H$_2$O)$_6$(NO$_3$)$_6$].   HMIR

7

REEL/FRAME

1971 0876

USSR

UDC:621.317.421

GORSKAYA, E.M., SKRYNNIKOV, R.G. and
FRANK-KAMENETSKIY, A.V.

"Measurement of Magnetic Induction During Pendulum Oscillations of
Magnetometer Measurement Trans former"

Moscow, Metrologiya, 1973, No 4, pp 73-79

Abstract: The subject magnetometer consists essentially of a pendulum
oscillating in the magnetic field to be measured. The voltage generated in a
coil mounted on the pendulum is proportional to the magnetic field. Three
problems related to this magnetometer are solved: 1. With the pendulum
oscillating in the plane of the magnetic meredian, the mean voltage for one
period of oscillation is derived, the expression of errors committed by
averaging the voltage for a fraction of a period is given. 2. The effect of
the magnetic moment of the magnetometer base is analysed. 3. The effect
of oscillations of the magnetometer base is investigated.

1/1

USSR

GORSKAYA, N. A.

"Estimate of the Accuracy of Calculation of One Class of Nonmonotonic Correlation Function"

Tr. Vses. Zaoch. Mashinostroit. In-ta [Works of All-Union Correspondence Institute of Machine Building], 1973, No 5, pp 5-9 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V170)

Translation: Suppose $\xi(t)$ is a stable random process with mathematical expectation m and correlation function $K(\tau)$, the realizations of which can be observed over a time interval of length T. Suppose further,

$$K(\tau) = D\theta(\tau)\cos 2\pi f\tau.$$

$$\theta(\tau) = \begin{cases} \dfrac{1}{\gamma-1}[\gamma e^{-\alpha|\tau|} - e^{-\alpha\gamma|\tau|}], & \gamma > 1, \\ [1 + \alpha|\tau|]e^{-\alpha|\tau|}, & \gamma = 1, \end{cases}$$

$$\bar{\mu} = \frac{T-\tau}{\tau_0}, \quad \bar{\tau} = \frac{\tau}{\tau_0}, \quad \bar{f} = f\tau_0.$$

where τ_0 is the solution of the equation $\theta(\tau_0) = 0.05.$ An approximate formula is presented for calculation of the dispersion $\sigma^2(\bar{\mu}, \bar{\tau}, \bar{f}, \gamma, \alpha)$ of the estimate

$$\hat{K}(\tau) = \frac{1}{T-\tau}\int_{t_0}^{t_0+T}[\xi(t)-m][\xi(t+\tau)-m]\,dt.$$

YU. Shinakov

1/1

USSR

MAKSIMOVA, I. V., GORSKAYA, N. V., and PIMENOVA, M. N., Chair of Microbiology, Faculty of Soil Biology, Moscow State University imeni M. V. Lomonosov, Moscow

"Liberation of Organic Substances by Chlorella pyrenoidosa During Its Growth and Cell Division"

Abstract: The study was undertaken to clarify if Chlorella pyrenoidosa liberates organic substances into the medium during the rupture of cell membranes or during its growth, and to compare the composition of extracellular products at these stages of cell development. A pure strain S-39 of Chl. pyrenoidosa was studied. The aplanospores were inoculated into "Tamiya" medium diluted 1:4. The content of carbohydrates in the medium was calculated from changes in carbohydrate concentration during the transformation of aplanospores into the mature parent cells ready for division (i.e., during 9 hours of illumination) and during the period of two divisions in light (i.e., 11 hours of illumination). The concentration of various organic compounds was calculated also after a complete division of cells in darkness (i.e., 9 hours of illumination and 15 hours of darkness). The amount of organic substances was estimated by wet combustion with potassium persulfate at 120°C for 30 min in sealed ampules.

1/2

USSR

MAKSIMOVA, I. V., et al., Mikrobiologiya, Vol 41, No 1, Jan/Feb 72, pp 59-63

The CO_2 produced was estimated using gas analyzer type OA 5501. The total amount of keto acids was estimated using calorimetric measurement in the form of 2,4-dinitrophenylhydrazine. The total amount of free amino acids in the medium was tested using colorimetric estimation of alpha-amino nitrogen. The accumulation of various groups of organic compounds was associated with various stages in the life cycle of the Chlorella cells. The concentration of poly-saccharides increased sharply only during reproduction of the algae. The concentration of free amino acids in the medium increased during the growth and transformation of the cells up to the beginning of the appearance of aplanospores. The concentration decreased during the transition of the algae to reproduction and during dark incubation. The concentration of keto acids in the medium increased both during growth and transformation and during the production of aplanospores from the parent cells in light. The keto acids are consumed in darkness.

2/2

1/2   018   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--MODEL SOUND WAVES IN A WEDGE WITH THE AID OF MOIRE PATTERNS -U-

AUTHOR-(03)-BARKHATOV, A.N., GORSKAYA, N.V., KACHKHOYEVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, AKUSTICHESKIY ZHURNAL, VOL 16, NO 1, 1970, PP 10-14

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GRAPHIC TECHNIQUE, ACOUSTIC FIELD, ACOUSTIC REFLECTION, BOTTOM
  LOSS, MATHEMATIC MODEL, MATRIX FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1878   STEP NO--UR/0046/70/016/001/0010/0014

CIRC ACCESSION NO--AP0106544
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0106544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALOGY MODELING OF THE SOUND
FIELD IN A WEDGE IS EXAMINED WITH THE AID OF MOIRE PATTERNS FORMED BY
SUPERIMPOSING MOIRE GRATINGS.   IT IS SHOWN THAT MOIRE PATTERNS MAKE IT
POSSIBLE TO GRAPHICALLY REPRESENT THE VERTICAL DISTRIBUTION OF THE FIELD
AT DIFFERENT DISTANCES FROM THE RIB OF THE WEDGE. THE QUESTION OF THE
NUMBER OF NORMAL WAVES IN THE PLANE PARALLEL LAYER AND THE WEDGE WHICH
MUST BE MODELING IN ESTIMATING LOSSES ACCOMPANYING THE REFLECTION OF
SOUND FROM THE ABSORBING BOTTOM WAS INVESTIGATED.   THE ANGLE BETWEEN
THE NORMAL TO THE FRONTS OF EACH OF THESE WAVES AND THE BOUNDARY OF THE
FLAT LAYER FOR THE CASE OF IDENTICAL (SOFT OR HARD) ABSOLUTELY
REFLECTING BOUNDARIES IS AN EQUALS ARCH SIN (N LAMBDA OVER 2H)   (1)
WHERE N EQUALS NUMBER OF NORMAL WAVE, LAMBDA EQUALS LENGTH OF SOUND
WAVE, AND H EQUALS THICKNESS OF LAYER.   ON THE OTHER HAND, THE PERIOD
OF THE MOIRE PATTERN H SUBM FORMED BY SUPERIMPOSING TWO HATCHED GRATINGS
WITH THE SAME PERIOD LAMBDA SUBM IS DETERMINED BY THE FORMULA: H SUBM
EQUALS LAMBDA M OVER S SIN A SUBM (2) HWERE S PRIMEA SUBM EQUALS ANGLE
OF INTERSECTION OF GRATING HATCHINGS.   FACILITY: GOR'KIY STATE
UNIVERSITY.

USSR   UDC 534.221

BARKHATOV, A. N., GORSKAYA, N. V., and KACHKHOYEVA, N. A., Gor'kiy
State University

"Model Sound Waves in a Wedge with the Aid of Moire Patterns"

Abstract: Analogy modeling of the sound field in a wedge is examined
with the aid of moire patterns formed by superimposing moire gratings.
It is shown that moire patterns make it possible to graphically repre-
sent the vertical distribution of the field at different distances from
the rib of the wedge. The question of the number of normal waves in
the plane-parallel layer and the wedge which must be modeling in estimating
losses accompanying the reflection of sound from the absorbing bottom was
investigated.

The angle between the normal to the fronts of each of these waves
and the boundary of the flat layer for the case of identical (soft or hard)
absolutely reflecting boundaries is

$$\alpha_n = \text{arch sin} \left(\frac{n\lambda}{2H} \right) \tag{1}$$

USSR

where n = number of normal wave, λ = length of sound wave, and H = thickness of layer.

On the other hand, the period of the moire pattern H_M formed by superimposing two hatched gratings with the same period λ_M is determined by the formula:

$$H_M = \frac{\lambda_M}{2 \sin\alpha_M}$$

$$(2)$$

where $2\alpha_M$ = angle of intersection of grating hatchings.

USSR   UDC: 621.372.8.092.22

BELYACHENKO, V. P., GORSKAYA, R. S., LAZERSON, A. G., RYZHENKO, B. F.,
CHARUSHKIN, B. D.

"Approximate Calculation of the Characteristics of Film-Type Decelerating
Systems on a Dielectric Substrate"

Translation: The proposed method, which can be used to calculate the dis-
persion characteristics of film-type rod decelerating systems on a dielec-
tric substrate, utilizes the well known results of investigation of film-type
rod systems without a dielectric. The method of perturbation and the method
of equivlaent substitution are used to derive computational formulas. Two
illustrations, bibliography of five titles. Resumé.

1/1

TITLE--PHOTOMETRIC METHOD FOR DETERMINING PYRIDINE AND ITS METABOLIC
   PRODUCTS IN BIOLOGICAL MEDIA -U-
AUTHOR-(02)-GORSKAYA, R.V., BOLONOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1), 30-1

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--PYRIDINE, QUANTITATIVE ANALYSIS, PHOTOMETRY, URINE, BLOOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0061   STEP NO--UR/9099/70/000/001/0030/0031

CIRC ACCESSION NO--AP0119057
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0119057
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR THE
  QUANT. DETN. OF PYRIDINE IN BIOL. MATERIALS. THE SAMPLES (0.1-0.2 ML OF
  BLOOD, 1-5 ML OF URINE, OR TISSUE) ARE MIXED WITH 0.1N HCL AND
  CENTRIFUGED. ONE ML OF 1PERCENT AMMONIUM THIOCYANATE AND I ML OF
  8PERCENT VHLORAMINE B ARE ADDED TO THE SUPERNATANT AND THE MIXT. IS LEFT
  FOR 10 MIN. THEN, 3 ML OF 1PERCENT BARBITURIC ACID IS ADDED AND THE
  MIXT. IS DILD. TO 15 ML WITH PHOSPHATE BUFFER, PH 6.0-6.2. THE MIXT. IS
  HEATED FOR 30-40 MIN AT 35-45DEGREES, CENTRIFUGED, AND THE ABSORBANCE IS
  DETD. AT 584 NM AGAINST THE BLANK WITHOUT BIOL. MATERIAL. A CALIBRATION
  CRUVE IS CONSTRUCTED USING A SOLN. OF PYRIDINE (0-10 MJG) IN 0.1N HCL.
       FACILITY: DONETS. NAUCH.-ISSLED. INST. GIG. TR. PROFZABOL.,
  DONETSK, USSR.

UNCLASSIFIED

FOAMING AS A CONTROL FACTOR OF FERMENTATION

R.P.Solfer, S.V.Gorskaya, T.A.Ivanova

National Institute for Antibiotics, Moscow, USSR

G13 6

GORSKAYA, S.V.

Intensification of antibiotic biosynthesis by the use of highly productive strains of antibiotic-producing organisms and more concentrated media usually increases foaming during fermentation. Necessity of avoiding losses due to abundant foaming of the fermentation broth stimulates actuality of studies concerning decrease of foaming and its regulation. Combination of foaming agents with substances affecting the strength of protective membranes of the foam bubbles are of special interest among means of foam breaking in the fermentation broth. It was shown that protein and other foaming agents added to the medium together with its components preserve their effect during the whole fermentation process. Interaction of the foaming agents with each other and the metabolites of the antibiotic-producing organism may result in mutual binding of the foaming capacity. Curves of the foaming dynamics during fermentation evaluated quantitatively with a numerical criterium developed at the National Institute for Antibiotics may serve as an illustration of it. Foaming is discussed in comparison with changing of a number of physical and chemical characteristics of fermentation broths; the effect of the factors concerning the inoculum and amount is shown. Utilies on foaming are advisable in connection with other technological characteristics of the fermentation process (the antibiotic level in the fermentation broth, its filtration capacity and others). Mathematical dependences of foaming and streptomycin biosynthesis with the medium content are presented. The equations of regression are interpreted graphically in plane.

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GORSKAYA, S. V.

EFFECT OF BIOSYNTHESIS CONDITIONS ON FILTRATION
CHARACTERISTICS OF FERMENTATION BROTHS
S.A. Zhukovskaya, S.V. Gorskaya.
National Institute for Antibiotics, Moscow, USSR

G10 11

The effect of main factors on filtration capacity of fermentation
broths is discussed. The nature of the antibiotic-producing organism (fungi
imperfecti, actinomycetes) has the principal effect on the filtration capacity of the fermentation broth, since it defines the amount and structure of
the filtration cake. Data on filtration properties of fermentation broths of
various antibiotic-producing organisms are presented. It is shown that the
qualitative composition of media has a significant effect on filtration of
the fermentation broths. Addition of protein-containing products, such as
soybean meal and others impedes the filtration. Enrichment of media with
main sources of nutrition as a rule increases the amount of the filtration
cake and decreases its permeability. The quantitative correlations between
the component concentration in media and the filterability of fermentation
broths are presented. Data on changes in the filtration characteristics of
fermentation broth during fermentation are presented. Filtration capacity of
the fermentation broth changes significantly in dependent on the biosynthesis duration. Dependence of filtration capacity on the content of colloids
of cultural broths, such as proteins, polysaccharides, etc. In a complicated
nature. Such factors are not decisive. The effect of the cake structure and
amount as a rule is prevailing. Preliminary treatment of the fermentation
broth before the mycelium separation markedly changes as a rule its filtration properties. The method used for the preliminary treatment of the fermentation broth should correlate with its filtration properties. Data on the
efficacy of various coagulation methods as applied to various fermentation
broths are presented.

So: OOL 32./1.035-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto,   (Abstracts of Soviet Papers)

TITLE--A STUDY ON MYCELIUM COMPOSITION OF ACTINOMYCES STREPTOMYCINI GROWN
  ON A DEFINED MEDIUM WITH GLUCOSE OR STARCH -U-
AUTHOR-(03)-LEVITOV, M.M., KOLESNIKOVA, N.A., GORSKAYA, S.V.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 91-94

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTINOMYCES, STREPTOMYCIN, POLYSACCHARIDE, CARBOHYDRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1730   STEP NO--UR/0220/70/039/001/0091/0094

CIRC ACCESSION NO--AP0109691
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0109691

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY ON MYCELIUM COMPOSITION OF
  ACTINOMYCES STREPTOMYCINI GROWN ON A DEFINED MEDIUM WITH GLUCOSE OR
  STARCH HAS SHOWN THAT THE MYCELIUM GROWN ON THE MEDIUM WITH GLUCOSE
  CONTAINED MORE NITROGEN AND NUCLEIC ACIDS THAN THE MYCELIUM GROWN ON
  STARCH.   THE MYCELIUM, GROWN ON THE MEDIUM WITH STARCH, WAS ENRICHED
  WITH CARBOHYDRATES, ESPECIALLY WITH POLYSACCHARIDES. SINCE LESS AMOUNT
  OF STREPTOMYCIN WAS PRODUCED ON THE MEDIUM WITH STARCH, SOME COMPETITION
  CAN BE SUGGESTED TO TAKE PLACE BETWEEN SYNTHESIS OF POLYSACCHARIDES AND
  THAT OF ANTIBIOTIC, TAKING INTO CONSIDERATION CARBOHYDRATE NATURE OF THE
  LATTER.

UNCLASSIFIED

USSR   UDC 632.95

GORSKAYA, T. V., SHVINDLERMAN, G. S., and BASKAKOV, YU. A.

"A Method for Preparing Esters of N-Carboaryloxy-o-hydroxylamino-benzoic Acid"

Translation: Compounds with the general formula $o\text{-ROOCC}_6H_4N(OH)COOC_6H_5X_n$ (I; R - lower alkyl; X - halide, alkyl, NO_2; n=0-2) are obtained from the reaction of $o\text{-ROOCC}_6H_4NHOH$ (II) with arylchlorocarbonate ester in the presence of a stoichiometric amount of $NaHCO_3$ in an anhydrous organic solvent at 5 to 25°. 0.84 g of anhydrous $NaHCO_3$ is added to a solution of 0.01 mole of II in 25 ml of Et_2O. Then 0.01 mole of arylchlorocarbonate is gradually added to the mixture as it is stirred and kept for 2 hours at about 20°. The precipitate is separated and the filtrate evaporated, producing an oily residue that crystallizes after being washed with petroleum ether. The following I (R, X_n, yield in %, melting point in °C are given) are obtained: Et, 2,4-Cl_2, 89, 109 (petroleum ether); Et, - , 96.5, 1/2

USSR

GORSKAYA, T. V., et al., USSR Author's Certificate No 248696, filed 18 May 68, published 26 Feb 70

55-7; Et, n-Me, 100, 77-9; Et, n-NO$_2$, 95.5, 90 - 1; Et, n-Cl, 93.6, 74-5. I posses physiological activity.

2/2

_ 28 _

USSR

YEVSTIGNEYEV, V. G., GORSKAYA, V. V., FILIPPOVA, N. V.

"Some Scaling Problems when Solving Problems in the System of Remainder Classes in the Nonredundant Arithmetic Range"

No abstract

1/1

USSR   UDC 532

GORSKIY, F. K., MIKHLIN, M. Ye.

"Change in Viscosity at the Transition Point of an Isotropic-
Liquid to the Liquid-Crystal Phase"

Translation: The results are given of the measurements of the
variation, with temperature, of the viscosity of cholesteryl cin-
namate, cholesteryl benzoate, and cholesteryl capinate. In the
neighborhood of the transition, this dependence has a λ shape.
The jumps in viscosity at the transition point are 67, 44, and
21% respectively. The most conclusive λ shape of the dependence
(at the elucidative point) is explained by the anisotropy of the
viscosity for the elongated molecules and the appearance, in the
pre-crystallization period, of ordering corresponding to the
liquid-crystalline state. Author's abstract.

1/1   •

1/2   020   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--THE EMPLOYMENT OF RADIOISOTOPES IN THE COMPLEX DIAGNOSIS OF TUMORS
  OF THE EYE AND ORBIT -U-
AUTHOR--DUBOVYY, YE.D., PAKHOMOVA, A.I., PANFILOVA, G.V., GORSKIY, L.A.,
  SOKOLOV, V.N.
COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 3, PP 30-34

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIAGNOSTIC METHODS, MEDICAL NUCLEAR APPLICATION, TUMOR, EYE,
  PHOSPHORUS ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1690   STEP NO--UR/0241/70/015/003/0030/0034

CIRC ACCESSION NO--AP0101745
                          UNCLASSIFIED

2/2   020   UNCLASSIFIED   PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101745
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS EXAMINED 351 PATIENTS
WITH TUMORS OF THE EYE AND ORBIT, OF THIS NUMBER 296 WERE OPERATED UPON.
THE FIRST GROUP INCLUDED 174 PATIENTS WITH NTRIO ULAR TUMORS. THESE
PATIENTS WERE EXAMINED WITH THE AID OF RADIOPHOSPHORUS. IN LOCALIZATION
OF THE TUMOR ON THE CONJUNCTIVA AND SOLERA A COINCIDENCE OF THE RESULTS
OF RADIOMETRIC INVESTIGATIONS WITH CLINICAL AND HISTOLOGICAL DATA WAS
NOTED IN 90 PER CENT OF CASES, WHEREAS IN MALIGNANT MELANOMA OF THE
VASCULAR MEMBRANE AND CILIARY BODY, IN 83 PERCENT AND IN MALIGNANT
TUMORS OF THE IRIS, IN 71 PER CENT OF CASES. IN LOCALIZATION OF TUMORS
IN THE POSTERIOR REGION OF THE EYE TRANSCONJUNCTIVAL RADIOPHOSPHORUS
DIAGNOSIS WAS CARRIED OUT. THE SECOND GROUP CONSISTED OF 122 PATIENTS
WITH TUMORS AND TUMOR LIKE DISEASES OF THE ORBIT AND ADJACENT REGIONS.
THIS GROUP OF PATIENTS WAS EXAMINED WITH THE AID OF P PRIME32, I
PRIME131, DIP AND I PRIME125. A COINCIDENCE OF DATA OF RADIOISOTOPE
DIAGNOSIS WITH THE RESULTS OF CLINICAL AND HISTOLOGICAL INVESTIGATIONS
FOR BENIGN TUMORS WAS 89.4 PER CENT, FOR MALIGNANT, 86.6 PER CENT OF
CASES.

UNCLASSIFIED

GORSKIY, S. M.

FOREIGN SCIENCE AND TECHNOLOGY CENTER
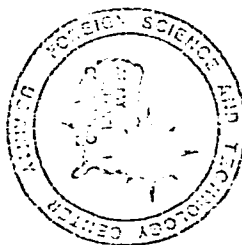
ARMY MATERIEL COMMAND

U.S. ARMY

FSTC-HT-23-562-72

INTERNAL COMBUSTION ENGINES WITH
HIGH PRESSURE FEED

by

S. M. Gorskiy, Y. A. Zverev, G. K. Ivanova

COUNTRY: USSR

Approved for public release; distribution unlimited.

Metrology, Surveying, Mapping, Graphics

USSR

UDC   621.438-22:539.319.001.5

GORSKIY, S. V. and MARTYNENKO, M. Ye.

"An Investigation of Heat Stresses in the Turbine Body of the TKR-11 Turbo Compressor in Unstable Modes of Operation"

Chelyabinsk, Sb., Nauch. Tr. Chelyabinsk. Politekhn. In-ta (Selected Scientific Proceedings of the Chelyabinsk Polytechnical Institute) No. 92, 1971, pp 106-109 (from Referativnyy Zhurnal - Turbostroyeniye, No. 9, Sep 71, Abstract No. 9.49.120)

Translation: The results of an experimental investigation of thermal stresses arising in turbine bodies under conditions close to those of use are given. At the same time the temperature fields are determined more accurately. The measurement of temperature on the surface of the turbine body was done with Chromel (chromium-nickel alloy) - aluminum thermocouples, while deformations were measured with high temperature tensometers. It was determined that significant stresses in the turbine body are not determined by the temperature drop across the thickness of the wall, but are connected with the constraint on the total deformation of the body as a result of the non-uniform distribution of temperature in connected parts (jet nozzle vane rings, central body, etc.). 2 illustrations, 5 bibliographic entries.

1/1

USSR   UDC 621.382.3

GORSKIY, S.M., LEVITSKIY, K.B.

"Effect Of Thickness And Resistivity Of An Epitaxial Film On The Cutoff Frequency Of Transistors"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 31-41 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B239)

Translation: The paper investigates the effect of the collector current density on the location of the boundaries of the space charge region of the collector junction of epitaxial transistors. It is shown that with specific conditions (narrow base, production by diffusion methods, high-resistance epitaxial film) expansion of the region of the neutral base in the range of its technological boundaries leads to a marked decrease of the critical frequency of the current transmission f_T. 5 ill. 5 ref. Author's abstract.

1/1

USSR

UDC 517.9

GORSKIY, V. B., Saransk

"Gas Flows at High Supersonic Velocity"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 10, Oct 72,
pp 18-22

Abstract: The article studies irrotational flows of an ideal gas near the
maximum velocity. Approximate equations of motion are found in physical var-
iables for the general three-dimensional, axisymmetric,and plane cases,
analogous to TSIEN's equations. Certain particular solutions of these equa-
tions are obtained. Plane flows are also considered in hodograph variables.
Approximate equations of motion are derived in canonical form for the stream
function and velocity potential. Riemann functions are found for these
equations to solve the fundamental boundary value problems,given an arbitrary
value for the adiabatic exponent.

1/1

AA 0040721   G   Gorskiy, V. B.
                                                    UR 0482
                                                              /-70
Soviet Inventions Illustrated, Section I Chemical, Derwent,

242214 METAL VACUUMING ROUTINE utilises variable
         rarefication in the feed funnel and high
residual pressure in the treatment chamber itself.
Varying the residual pressure above the meniscus
in the funnel and maintaining the residual pressure
inside the chamber ensures smooth control of metal
feed and at the same time keeps a constant metal level.
Electron ring or vortex pumps are suitable, sealed
to the upper lip of the funnel. This allows metal
to be poured into the funnel without disturbing the
residual pressure control.'
13.5.66 as 1078001/22-2. GRANAT.I.YA et al(11.9.69)
Bul 15/25.4.69. Class 18b, 31b2. Int.Cl.C 21c,
B 22d.

19750364

AA0040721

AUTHORS: Granat, I. Ya.; Gorskiy, V. B.; Zhuravlev, P. Ya.;
           Skul'skiy, V. I.; and Morozenskiy, L. I.

19750365

USSR

GORSKIY, V. G.

"Statistical Tasks in the Development of Kinetic Experiments"

Voprosy Kibernetiki. Nekotoryye Voprosy Planirovaniya Eksperimenta [Problems of Cybernetics. Certain Problems of Experimental Planning], Moscow, 1972, pp 103-132 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V298, by the author).

Translation: The study of the kinetics and mechanism of complex chemical reactions is of exceptional interest today. The mathematical theory of kinetics and the mechanism of complex chemical reactions has achieved significant successes. Recent works in the area of mathematical theory have turned great attention to planning of experiments studying kinetics and the mechanism of reactions. As concerns methods of statistical processing of kinetic experiments, they have been little covered in the literature. This article presents a brief description of the most important tasks in statistical processing of experiments on the kinetics and mechanism of reactions. The paper is concerned with complex, multistage chemical reactions; however, the results produced naturally retain force in the studies of the kinetics of simple reactions.

1/1

USSR

UDC: 512.25/.26+519.3:330.115

GORSKIY, V. G., SHVED, V. I.

"Use of a Simplex Method of Optimum Search to Solve Problems in Whole-Number Programming"

V sb. Vopr. kibernetiki)Problems of Cybernetics--collection of works), vyp. 41, Tashkent, 1970, pp 71-75 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V623)

[No abstract]

1/1

·USSR   UDC 621.763:669.01

KARPINOS, D. M., FEDORENKO, V. K., BURYKINA,A. L., and GORSKIY, V. V.,
Institute of Problems of Material Science, Academy of Sciences UkrSSR,
Institute of Metal Physics, Academy of Sciences UkrSSR

"Study of Interactions at the Phase Division Boundary in Composite
Materials with a Nichrome Matrix and Fibers Based on Tungsten and
Molybdenum"

Abstract: This work studies the structure and phase composition of the
transition zones, determination of the mechanism and kinetics of growth
of interaction zones, the influence of alloy elements in the fiber and
matrix on the mechanism and kinetics, the study of recrystallization
in the fibers and determination of the influence of all these factors
on some of the strength characteristics of fiber-reinforced materials.
It is established that the phase composition of the reaction zone does
not influence the quantitative relationships of layer growth. The
kinetics of diffusion processes in the system studied correspond to a
vacancy mechanism. The alloying elements in the fiber and matrix have
1/2

- 15 -

- USSR

KARPINOS, D. M., et al., Poroshkovaya Metallurgiya, No 2, Feb 74, pp 64-75

a significant influence on the parameters of layer growth. The diffu-
sion of nickel and chromium in the fiber is rapid. Recrystallization
phenomena in fibers represent one of the main causes of the reduction
in strength of fiber reinforced materials during long-term operation.

2/2

USSR
UDC 669.018.95

BURYKINA, A. L., DZYADYKEVICH, YU. V., GORSKIY, V. V., Institute of Problems of Material Sciences, Academy of Sciences Ukrainian SSR and Institute of Metal Physics, Academy of Sciences Ukrainian SSR

"Izvestigation of the Stability of B-Ti and SiC-Ti Composites During Extended Vacuum Heating"

Abstract: The interactions of B-Ti and SiC-Ti composites were studied at $900^{\circ}C$ in a vacuum for periods extending up to as much as 300 hours. For the titanium-boron fiber composite it was established that annealing for longer than 50 hours causes a diffusion zone to be formed with a thickness up to 5 microns, and, for a period longer than 100 hours, characteristic formations in the form of a "solar corona" appear in the structure of the layer. Data from micro-x-ray spectral analysis for a 300-hour anneal show that a rich-boron phase is formed which is very close in composition to TiB_2. A silicon carbide fiber also reacts with the titanium matrix at $900^{\circ}C$ and 300 hours with the formation of two annular zones very close in composition and close to the composition of titanium silicide Ti_5Si. At higher temperatures a phase rich with silicon -- Ti_5Si_3 is formed. 3 figures, 4 bibliographic references.
1/1

USSR   UDC 669.018.95

BURYKINA, A. L., DZYADYKEVICH, Yu. V., and GORSKIY, V. V., Institute of
Problems of Material Science, Academy of Sciences UkrSSR, Institute of
Physics of Metals, Academy of Sciences UkrSSR

"Investigation of the Compatibility of Boron Fibers With Tungsten Substrate
and Titanium Matrix"

Abstract: The reaction of boron fibers with a tungsten core was investigated
at 1100°C and with a titanium matrix at 900, 1000, 1100, and 1300°C and 1,
3, 5, and 10 hrs of aging in a vacuum of $1 \cdot 10^{-4}$ mm Hg. Metallographic
methods, x-ray phase and x-ray microspectral analysis, and microhardness
measurements were used for the investigation. It was established that the
boron fiber reacts with the tungsten substrate at 1100°C to form the higher
tungsten borides WB_4 and, probably, WB_{12}. Boron fiber is stable in a
titanium matrix up to 900°C; at higher temperatures, titanium borides
Ti_2B and TiB are formed as a result of unipolar diffusion of boron into
titanium. A comparison of results with data of other authors indicates
that in the composition boron fiber – titanium matrix at 900°C a diffusion
zone develops over a period of 100 hrs which has the same thickness as in
1/2

USSR

BURYKINA, A. L., et al., Poroshkovaya Metallurgiya, No 11 (119), Nov 72,
pp 48-53

a nickel matrix at 700°C at the same heating duration. Four figures, one
table, thirteen bibliographic references.

2/2

USSR

UDC 539.6.01:536:24

GORSKIY, V. V. and POLEZHAYEV?, Yu. V.

"Heat and Mass Exchange on the Surface of Fiberglass-Reinforced Graphite
Materials in a High-Temperature Gas Stream"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6,
Nov-Dec 72, pp 71-87

Abstract: The mutual influence of evaporation and combustion during the de-
struction of fiberglass-reinforced graphite materials in a hypersonic gas
stream is dealt with. It is shown that fiberglass-reinforced plastics have
three regimes of destruction (ablation) when acted upon by a high-temperature
airstream. In the first regime, at low rates of destruction, SoO_2, SiO,
and CO_2 predominate among the components containing carbon and silicon in
the composition of the gas in the boundary layer. In the second regime, at
moderate rates of destruction (ablation), only SiO, CO_2, and CO are signifi-
cant among the components of the above-mentioned type. In the third regime,
at high rates of ablation, the components containing the above-mentioned
elements are restricted to SiO, CO, and Si.

The features of the first regime are common to all fiberglass-reinforced
plastics, and virtually do not depend upon their elementary composition.
1/2

USSR

GORSKIY, V. V. and POLEZHAYEV?, Yu. V., Izvestiya Akademii Nauk SSSR,
Mekhanika Zhidkosti i Gaza, No 6, Nov-Dec 72, pp 71-87

In the second regime of destruction, the presence of free carbon in the
boundary layer brings about a sharp intensification of the evaporation of
SiO_2, and the dependence of the ablation rate upon the temperature of the
heated surface, starting with some specific relationship of the mainstream
parameters, becomes ambiguous. The third regime of destruction takes place
only in fiberglass-reinforced plastics, the carbon content of which exceeds
by 25% the content of glass, by weight.

The thermal effect of the physicochemical interaction of the material with
the mainstream is studied, and the relationship of the parameters of coating
ablation to the destruction schemes is discussed. The influence of the
composition of the material upon the basic processes of its destruction is
established, 7 figures, 3 tables, 8 references.

2/2

USSR   UDC 621.643.29+002.72

KONCHEV, Yu. N., State Scientific Research Institute of the Gas Industry,
Saratov; GORSKIY, V. V., NESTEROV, A. M., Northwest Specialized Con-
struction Trust, Kalinin

"Construction of a High Pressure Polyethylene Gas Line Under Winter
Conditions"

Moscow, Stroitel'stvo truboprovodov, No. 5, May 72, pp 24-26

Abstract: Studies have shown that pipes of high-density polyethylene can be
welded at temperatures below 0°C down to an ambient air temperature of
-20°C without lowering the qualities of the welded joint. It is noted
that the basic factors determining the properties of a welded seam, in
addition to the welding technique, are the temperature and the rate of
cooling of the molten material. At a high rate of cooling and at low
temperatures of the structure the seam becomes microcrystalline, with the
result that there is a certain drop in the density, the yield point and
the strength of the material, for example, in many experiments the density
of the material reduced from 0.956 to 0.951 g/cm^3 and the yield point and
the strength were reduced 8-10%. There is also a rise in the relative
expansion of 65-80% on the average and in the shock viscosity of 20-25%.

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USSR

KONCHEV, Yu. N., et al, Stroitel'stvo truboprovodov, No. 5, May 72, pp 24-26

The properties of the material change with the course of time due to
continuing crystallization processes in it. The structure transforms into
an equilibrium state and after 5-9 days the high-density polyethylene
reestablishes its initial properties. It is recommended that the location
where the welding is done be protected from wind and precipitation and that
the flashing off temperature of the material be increased by 5-10% to
obtain a high-quality welded joint at temperatures below zero. Individual
sections of the pipe line were subjected to strength and density tests and
after completion of the construction the entire line was subjected to a
pneumatic test at pressures of 7.5 and 6 kilogram-force/cm^2. The tests
showed the high strength of the welded joints and no breakdowns in the
joints or a disruption in their density was observed.

·USSR   UDC 539.292:548.73

NEMOSHKALENKO. V. V., GORSKIY V. V., and KORKISHKO, R. F.,
Institute of Metal Physics, Academy of Sciences UkrSSR

"X-Ray-Spectral Study of the Electron Structure of Nickel and
Aluminum Atoms in the System of Binary Nickel-Aluminum Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3,
Mar 71, pp 634-637

Abstract: Single-phase alloys of nickel with 25, 50, 60, and 75
at. % Al were studied. The emission K spectra of nickel and
aluminum were studied and compared with the L spectra presented
in the literature. The data produced indicated that the forma-
tion of aluminides in the nickel-aluminum system involves a signi-
ficant redistribution of electrons between the atoms of aluminum
and nickel. In contrast to aluminides of the first half of the
period, nickel aluminides apparently include both covalent bonds
and ionic bonds, the share of ionic bonds being quite high in
comparison with the iron-aluminum and cobalt-aluminum systems
studied earlier. The change in the form of the Al K_x band in
the nickel-aluminum system indicated that, in contrast to the
1/2

USSR

to the other systems, localization of all p electrons does not occur, some of them supporting conductivity together with the s electrons and participating in the formation of ionic bonds between the atoms of the alloy components.

2/2

USSR

PET'KOV, V. V., MARKIV, V. YA., and GORSKIY, V. V.

"Compounds with an MgCu$_2$-Type Structure in Zr-Ni and Hf-Ni Alloys"

Abstract: The Zr-Ni systems was investigated using seven alloys containing the following amounts of nickel (at.%): 64.8, 65.5, 66.7, 67.5, 68, and 69. The Zr-Ni alloys were made by electric-arc melting of a charge consisting of zirconium iodide (99.96%) and electrolytic nickel (99.99%). Hafnium with a purity of 99.93% was used to produce the HfNi$_2$ alloy. Heat treatment of the alloys consisted of a 200-hour anneal at 900°C followed by cold water quenching. Both cast and hardened alloys were studied by methods of x-ray diffraction, microstructural, local x-ray spectral, differential thermal, and durometric analyses.

In both systems, for compositions of ZrNi$_2$ and HfNi$_2$, compounds are formed with a structure of the type MgCu$_2$ with lattice constants equal to 6.925 and 6.906 A, respectively. The compound ZrNi$_2$ forms according to a peritectic reaction at 1190°C while compounds Zr$_2$Ni$_5$ and ZrNi$_3$ form at 1265 and 1575°C. Three figures, 3 tables, 10 bibliographic references.

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USSR   UDC 539.292:548.73

NEMOSHKALENKO, V. V., GORSKIY, V. V., and KORKISHKO, R. F.,
Institute of Metal Physics, Academy of Sciences UkrSSR

"X-Ray-Spectral Study of the Electron Structure of Nickel and
Aluminum Atoms in the System of Binary Nickel-Aluminum Alloys"

Abstract: Single-phase alloys of nickel with 25, 50, 60, and 75
at. % Al were studied. The emission K spectra of nickel and
aluminum were studied and compared with the L spectra presented
in the literature. The data produced indicated that the forma-
tion of aluminides in the nickel-aluminum system involves a signi-
ficant redistribution of electrons between the atoms of aluminum
and nickel. In contrast to aluminides of the first half of the
period, nickel aluminides apparently include both covalent bonds
and ionic bonds, the share of ionic bonds being quite high in
comparison with the iron-aluminum and cobalt-aluminum systems
studied earlier. The change in the form of the Al $K\beta_x$ band in
the nickel-aluminum system indicated that, in contrast to the
1/2

USSR

NEMOSHKALENKO, V. V., et al., Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 634-637

to the other systems, localization of all p electrons does not occur, some of them supporting conductivity together with the s electrons and participating in the formation of ionic bonds between the atoms of the alloy components.

2/2

USSR   UDC   621.311-52

GORSKIY, YU. M., URSUL, A. D.

"Information in the Control of Large Systems (Procedural Aspects)"

V sb. Optimiz. i upr. bol'shimi sistemami v energ. (Optimization and Control of
Large Systems in Power Engineering -- collection of works), Irkutsk, 1970,
pp 47-79 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No
4 Ye234)

Translation: A study was made of the possibilities of using the means of infor-
mation theory for analysis of the control of large systems in power engineering,
the interrelation of the concepts of information, organization, entropy and pur-
pose, classification of types of movement and representation of information, the
possibilities of separating the basic levels of description and simulation of
information processes in large systems. Organization is one of the fundamental
properties of all material systems. It is proposed that various types of repre-
sentation of information be characterized by the degree of elimination of dis-
order (the inverse of organization) of the following basic types: linear, step
logarithmic and exponential. The approach to description and simulation of the
information problems of functioning of artificial large systems (composition,
structure and properties of various levels of abstraction of the systems,

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USSR

GORSKIY, Yu. M., URSUL, A. D., Optimiz. i upr. bol'shimi sistemami v energ.
(Optimization and Control of Large Systems in Power Engineering -- collection
of works), Irkutsk, 1970, pp 47-79 (from RZh-Elektrotekhnika i Energetika,
No 4, Apr 71, Abstract No 4 Ye234)

control units, information converters) is discussed. It is noted that the con-
tent of the information problems discussed is preliminary and it must be refined
and developed further. There are 3 illustrations, 1 table and a 25-entry biblio-
graphy.

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USSR   UDC 51

GORSTKO, A. B., YELISTRATOV, A. D., and KLYUYEV, V. N.

"On Certain Optimization Problems Involving Macroeconomic Models"

V sb. Mat. analiz ekon. modeley. Ch. 3 (Mathematical Analysis of Economic Models.
Part 3 -- Collection of Works), Novosibirsk, 1972, pp 34-50 (from RZh-Matematika,
No 3, Mar 73, Abstract No 3V577 from the introduction)

Translation: Suppose that planning takes place during an infinite period.
Function $f(c(t))$ at each moment of time t characterizes the effect of consump-
tion $c(t)$. On the set of functions $c(t)$ let us define the functional

$$\Phi(c) = \int_0^\omega f(c(s)) e^{\alpha s} ds,$$

where $\alpha < 0$ is the discount coefficient. Function $c(t)$ must satisfy certain
conditions. A number of extremal problems arise in accordance with these con-
ditions and the assumptions made.

1/1

3

USSR

ZAPEVALOV, P. P., MILASHCHENKO, N. Z., PADZINOVSKIY, I. P., GORTLEVSKIY, A. A.,
MARINCHENKO, M. Z., YAKOVLEVA, L. I., YEMEL'YANOV, I. M.

"Results of Field Testing of Various Emulsions and Forms of 2, 4-D Butylester"

Translation: In 1969, experiments were performed to compare the technical
effectiveness of various 2, 4-D emulsions under field conditions when sprayed
from the air (dose 0.4 kg/ha). Products used were: 1. 2,4-D -- technical
preparate +1% OP-10 emulsifier; preparation of the emulsion was by spraying the
preparate into water; 2. 2,4-D -- technical preparate +3% OP-10, spraying
method; 3. 2,4-D -- "A" form (60% 2,4-D butylester, 20% OP-7, 20% diesel
fuel); 4. 2,4-D type "B" (60, 10 and 30 % respectively); 5. 2, 4-D -- "C"
form (60, 5 and 35 % respectively); 6. 2,4-D -- technical preparate. The
effects of the herbicide were evaluated on the basis of the quantity and weight
of perennial weed shoots and the wheat harvest. Versions 1 and 2 give the
best results.
1/1

USSR

GORTSEV, A. M.

"Extension of a Solution Based on Observations of a Sum of Weighted Independent Random Quantitites"

Tr. Sib. fiz.-tekhn. in-ta pr Tomsk. un-te [Works of Siberian Institute of Physics and Technology of Tomsk University], 1973, No 65, pp 222-226 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V174 by Ye. Troitskiy)

Translation: There are n independent random quantities ξ_i ($i=1, \ldots, n$), taking on values of +1 and -1. When the set of conditions S_1 is fulfilled $P\{\xi_i=+1\}=p_i$, $P\{\xi_i=-1\}=1-p_i$. When the set of conditions S_2 is fulfilled, $P\{\xi_i=-1\}=p_i$, $P\{\xi_i=+1\}=1-p_i$, $1/2 \leq p_i \leq 1$. Probabilities $P_j=P\{S_j\}$ ($j-1,2$) are known. The problem is, using the observations of the weighted sum $\sum_{1 \leq i \leq n} \xi_i f(p_i)$, to make a decision on the present conditions S_1 or S_2. Coefficients $f(p_i)$ must be selected in a manner which is optimal in some sense. A Bayes decision rule is studied, minimizing the mean Bayes risk R. It is shown that with sufficiently large N, coefficients $f(p_i)=(2p_i -1)/[p_i(1-p_i)]$ minimize the Bayes Risk R.

1/1

UDC 621.315.592

USSR

SANDULOVA, A. V., GORTYNSKAYA, I. D., KOSENKO, A. YE., GONCHAROV, A. D., L'vov
Polytechnic Institute

"Optical and Photoelectric Properties of Thin Layers of Tellurium Obtained by
Compression of a Melt"

Abstract: A study was made of the optical absorption and reflection spectra
and the photoconductivity of model crystalline layers of tellurium in the
spectral range of 2.5-15 microns at temperatures of 390°K. The studies were
performed in nonpolarized light, and modulated illumination was used. The
characteristic curve of the spectral distribution of the photoconductivity of
thin layers of tellurium obtained by compression of a melt at 90°K is presented.
Two peaks in the short-wave absorption edge region are observed. The distinguish-
ing feature of the spectral curves of the photoresponse are the presence of a
weak peak in the vicinity of 7 microns and a sharp increase in the photoconduct-
ivity in the longer wave region. Explanations are offered for these effects.
The simplicity of obtaining model crystalline tellurium layers and the presence
of photoconductivity in the ~3.5 and ~11 micron range make these layers
prospective for the manufacture of photoreceivers to operate at the temperature
of liquid nitrogen.
1/1

- 201 -

UDC 620.184.6:539.562

USSR

VESELYANSKIY, YU. S., GORUSHKINA, L. P., ZAKHAROV, V. I., JURILO, YU. P.,
and SOMOV, A. I., Ukrainian Correspondence Polytechnic Institute

"Impact Ductility of a Composite Material"

Abstract: The impact ductility of an $Al-Al_3Ni$ composite was investigated on
specimens of the Al-Ni eutectic alloy grown in vacuum, depending on the cross
section of Al_3Ni fiber. The impact ductility was found to be independent of
the testing temperature and to depend on the crystallization rate. According
to fractographic data, in impact bending of specimens of an $Al-Al_3Ni$ composite
with great interfiber distances, the crack propagates more slowly than on speci-
mens with small interfiber distances. This results in increased fracture of an
$Al-Al_3Ni$ composite obtained at low crystallization rates. The $Al-Al_3Ni$ material
possesses a low notch sensitivity; on the macrorelief of fractures of notchless
specimens, local zones of brittle failure are absent. One figure, ten biblio-
graphic references.
1/1

- 9 -

1/3 , 027   UNCLASSIFIED   PROCESSING DATE--23OCT70

TITLE--TUNGSTEN ANALOG OF PHOSPHONITRILE CHLORIDE AND SOME OF ITS
   PROPERTIES -U-

AUTHOR-(04)-KUZNETSOVA, A.A., BUSLAYEV, YU.A., GORVACHOVA, L.F., PODZOLKO,
   YU.G.

COUNTRY OF INFO--USSR

SOURCE--IZ. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 463-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TUNGSTEN, CHLORIDE, IR SPECTRUM, PHOSPHONITRILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1500   STEP NO--UR/0062/70/000/002/0463/0465

CIRC ACCESSION NO--AP0120284
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0120284
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 1:3 MIXT. OF WCL SUB5 AND NH
  SUB4 CL IN A QUARTZ TUBE CONNECTED TO AN ABSORBER WITH METHYL RED SOLN.
  FOR DETECTION OF HCL AND KI SOLN. FOR DETECTION OF ANY CL, WAS COVERED
  WITH EXCESS NH SUB4 CL AND THE MIXT. UNDER AR ATM. WAS SLOWLY HEATED TO
  190DEGREES, WHEN HCL FORMATION BEGAN. WHEN THE MIXT. BECAME DARK BROWN,
  IT WAS HEATED TO 250DEGREES TO EXPEL NH SUB4 CL, LEAVING BEHIND WNCL
  SUB2, BROWN SOLID, INSOL. IN ALL ORG. SOLVENTS.   IT GAVE AN IR BAND AT
  500-1000 CM PRIME NEGATIVE1 CAUSED BY W-N VIBRATIONS IN A NWNW CHAIN.
  HEATED IN AIR IT DECOMPD. AT 340DEGREES WITH SUBSEQUENT OXIDN. TO WO
  SUB3. PYROLYSIS IN AR ATM. BEGAN AT 450DEGREES.   THE THERMAL STABILITY
  OF WNCL SUB2 WAS SIMILAR TO ITS NB ANALOG.   TREATED WITH H SUB2 O THE
  SUBSTANCE IN POWD. FORM HYDROLYZED EVEN AT ROOM TEMP. AT W-CL BONDS AND
  GAVE WN(OH) SUB2.2H SUB2 O. NO NOTICEABLE REACTION WITH ETOH TOOK PLACE
  AT ROOM TEMP. BUT ON HEATING A GREY BLUE COLOR DEVELOPED AS A RESULT OF
  FORMATION OF WN(OE) SUB2. LIQ. NH SUB3 USED IN CONTINUOUS EXTN. OF WNCL
  SUB2 FOR 1 HR GAVE WN(NH SUB2) CL.NH SUB3, BROWN SOLID, INSOL. IN USUAL
  SOLVENTS, AND WITH IR SPECTRUM CONTG. BANDS AT 1289 CM PRIME NEGATIVE1
  AND 1600 CM PRIME NEGATIVE1 FROM DEFORMATION OF COMPLEXED HN SUB3, AS
  WELL AS 500-1000 CM PRIME NEGATIVE1 BAND OF THE W-N BOND VIBRATIONS.
  WNCL SUB2 AND ET SUB2 NH IN CHCL SUB3 REACTED READILY AND GAVE WN(NET
  SUB2) CL, ALSO INSOL. AND WITH A WIDE BAND IN 500-1000 CM PRIME
  NEGATIVE1 REGION IN ITS IR SPECTRUM.

UNCLASSIFIED

CIRC ACCESSION NO--AP0120284
ABSTRACT/EXTRACT--WN-(NH SUB2) CL.NH SUB3 AND WN(NET SUB2) CL WERE RATHER
  STABLE IN TERMS OF HYDROLYSIS IN CONTACT WITH AIR BUT IN H SUB2 O THEY
HYDROLYZED RAPIDLY TO WN(OH) SUB2.H SUB2 O; ETOH SIMILARLY GAVE WN(OET)
SUB2.   FACILITY: INST. OBSCH. NEORG. KHIM. IM. KURNAKOVA,
MOSCOW, USSR.

UNCLASSIFIED

1/2   010   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--SELECTION OF PARAMETERS TO BE CONTROLLED IN PRELAUNCH TESTING OF
   CONTROL SYSTEM DYNAMIC RESPONSE -U-
AUTHOR--GORYACHENKOV, A.T.

COUNTRY OF INFO--USSR

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
   AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 13 P.
DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, SPACE TECHNOLOGY

TOPIC TAGS--PARAMETER, CONTROL SYSTEM DESIGN, TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0016   STEP NO--FR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0117313
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0117313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   STUDY OF AN APPROACH WHICH,
WITHOUT ANY COMPLEX ANALYTICAL CALCULATIONS OR GEOMETRIC OPERATIONS,
WOULD RELATE THE MOST SUBSTANTIAL DYNAMIC PROPERTIES OF THE CONTROL
SYSTEM OF MODERN SPACE COMPLEXES WITH THE FORM OF THE NYQUIST LOCUS.
THIS APPROACH SUBSTANTIALLY INCREASES THE DIRECT INFORMATIONAL CAPACITY
OF FREQUENCY RESPONSES AND FACILITATES THE SOLUTION TO THE PROBLEMS
INVOLVED.   THE MATTER IS SOLVED BY FORMULATING THE PROBLEM OF FINDING
THE RELATION OF THE LOCI CLOSE TO THE IMAGINARY AXIS WITH THE OPEN LOOP
FREQUENCY RESPONSES.   THE METHOD IS BASED ON CERTAIN RESULTS ELSEWHERE
REPORTED BY THE WRITER.

UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE--27/70/ ﹖

TITLE--SUBSTRATE SPECIFICITY OF SERINE SULFHYDRASE FROM CHICK LIVER AND
  ITS RELATION TO SOME INHIBITORS -U-

AUTHOR-(03)-NGUYENDINH, L., GORYACHENKOVA, YE.V., BRAUNSHTEYN, A.YE.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(2), 270-7

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SERINE, SULFUR COMPOUND, HYDROGEN SULFIDE, CYSTINE, CYSTEAM
  METABOLIC INHIBITOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0335   STEP NO--UR/0218/70/035/002/0270/0277

CIRC ACCESSION NO--AP0135828
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0135828

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF H SUB2 S BY A
  MIXT. OF SERINE SULFHYDRASE (I) AND L CYSTEINE INCREASED UPON THE ADDN.
  OF BETA MERCAPTOETHANOL, CYSTAMINE, OR HOMOCYSTEINE, WITH THE CONCURRENT
  FORMATION OF S HYDROXYETHYLCYSTEINE, S,(2,AMINOETHYL)CYSTEINE, AND
  CYSTATHIONINE.   AS WITH CYSTEINE, I ALSO CATALYZED GENERAL TRANSFER TO
  THE BETA C OF SERINE. I SYNTHESIZED CYSTATHIONINE FROM SERINE AND
  HOMOCYSTEINE MORE RAPIDLY THAN CYSTEINE FROM SERINE AND S PRIME2. THE
  REACTION OF L CYSTEINE AND I WAS INHIBITED BY AMINOOXYACETIC ACID, L
  SERINE, L THREONINE, OR L CHLOROALANINE. PREINCUBATION OF THE LAST
  COMPD. WITH I INHIBITED I IN PROPORTION TO THE TIME OF PREINCUBATION.
  DL CYCLOSERINE DID NOT INHIBIT I.   FACILITY: INST. MOL. BIOL.,
  MOSCOW, USSR.

UNCLASSIFIED

1/2   014   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--CONDITIONS FOR THE EXISTENCE OF SODIUM CALCIUM SILICATE HYDRATE IN
  ALKALINE SOLUTIONS -U-
AUTHOR-(02)-GORYACHEV, A.A., IGNATYEV, O.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 999-1002

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTALLIZATION, CALCIUM OXIDE, SODIUM OXIDE, SILICATE, METAL
  COMPLEX COMPOUND, ALUMINUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0937   STEP NO--UR/0080/70/043/005/0999/1002

CIRC ACCESSION NO--AP0131522
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131522

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYSTN. REGION OF NA $SUB2$ $O.2CAO.2SIO$ $SUB2$ .H $SUB2$ O (I) OVER A WIDE TEMP. RANGE (150-300DEGREES) AND THE NAOH CONCN. RANGE (150-400 G-L.) WAS DETD. THE DECOMPN. OF I ON PROLONGED CONTACT WITH THE ALUMINATE SOLN. IS EXPLAINED BY THE FORMATION OF ALUMINOSILICATE COMPLEXES IN THE LAYER NEXT TO THE CRYSTALS. THESE COMPLEXES ARE TRANSPORTERS OF SI.

UNCLASSIFIED

1/2   007   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ON UNDISTORTED LINEAR NORMED SPACES -U-

AUTHOR--GORYACHEV, A.P.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK MOSKOVSKOGO UNIVERSITETA, MATEMATIKA, MEKHANIKA, 1970, NR
  1, PP 21-28
DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--LINEAR FUNCTION, MATHEMATIC SPACE, HILBERT SPACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0568   STEP NO--UR/0055/70/000/001/0021/0023

CIRC ACCESSION NO--AP0117798
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0117798
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS PAPER THE FOLLOWING
  THEOREMS ARE PROVED.   THEOREM 1.   ANY UNDISTORTED TWO DIMENSIONAL
  LINEAR NORMED SPACE IS A HILBERT SPACE.   THEOREM 2.   ANY UNDISTORTED
  LINEAR NORMED SPACE IS A HILBERT SPACE.

UNCLASSIFIED

1/2   009   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--GIANT DIPOLE RESONANCE ON NICKEL ISOTOPES -U-

AUTHOR-(05)-GORYACHEV, B.I., ISHKANOV, B.S., KAPITONOV, I.M., PISKAREV,
  I.M., SHEVCHENKO, V.G.
COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 252-9

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--NICKEL ISOTOPE, INTEGRAL CROSS SECTION, PARTICLE PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0367   STEP NO--UR/0367/70/011/002/0252/0259

CIRC ACCESSION NO--AP0048639
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0048639

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THE EFFECTIVE CROSS SECTIONS OF
PHOTO N PRODUCTION FOR PRIME58 NI AND PRIME60 NI IN THE DOMAIN OF THE
GAINT DIPOLE RESONANCE ARE DESCRIBED.   THE INTEGRAL CROSS SECTION UP TO
30 MEV IS 310 FOR PRIME58 NI AND 620 MEV-MB. FOR PRIME60 NI.   TOTAL
ABSORPTION CROSS SECTIONS FOR THE ISOTOPES ARE CONSTRUCTED AS THE SUMS
OF THE PHOTO N AND PHOTO P CROSS SECTIONS.   THE VALUES DO NOT AGREE
WELL WITH THOSE COMPUTED BY VARIOUS MODELS.   FACILITY: INST.
YAD. FIZ., MOSCOW, USSR.

USSR
ABDULLAYEV, G. B., ALIYEVA, N. Kh., GORYACHEV, D. N., MAZTIEV,
F. N., PARITSKIY, L. G., and RYVKIN, S. M.

UDC: 621.315.592

"Obtaining Photographic Images on Fine Films of Gallium and Indium
Selenides"

Abstract: This paper is a sequel to an earlier article by some of
the authors named above (D. N. Goryachev, et al, 4, 1970, p 1580)
published in the journal named above, in which the use of thin
films of lead selenides and sulphides for retaining photographic
images was discussed. In the present brief communication, the
possibility of getting photographic images on thin films of gal-
lium and indium selenides, of the lesser studied class of semi-
conductors of the $A^{III}B^{IV}$ type, is considered. To do this, use is
made of the dependence of the oxide reproduction process speed at
the semiconductor-electrolyte interface on the illumination the
semiconductor is exposed to. For the experiments described in
this article, polycrystals of p-type GaSe were used in films 0.6
to 0.8 μ thick as well as n-type InSe in films about one micron
thick, deposited on glass substrates by sputtering in a vacuum.
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USSR

In the case of InSe, it was found that the images on it may be
strengthened through the use of physical developers.

2/2

Presents an engineering method of designing ground structures for the protection against the penetrating radiation of nuclear explosion. Since the nuclear explosion as a source of penetrating radiation is well treated in the literature, only its general characteristics are discussed here. Imphasis is placed here on neutrons and gamma rays produced at the atmosphere-ground interface and on the penetration of radiation through the typical protective media for the geometry inherent in protective structures. The book is intended for scientific and technical personnel engaged in radiation protection work.

Contents

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KUKHTEVICH, V. I., et al., ZASHCHITA OT PRONIKAYUSHCHEY RADIATSII
YADERNOGO VZRYVA (Protection Against the Penetrating Radiation of a
Nuclear Explosion), Moscow, Atomizdat, 1970, 190 pp

USSR   UDC: 621.373.531

GORYACHEV, L. V.

"Transient Processes in a Probe Pulse Shaper Circuit"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnical Institute),
1970, 26, No 7, pp 14-15 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract
No 2G240)

Translation: The author discusses the oscillations at the peak of a voltage
drop which take place when shaper circuits based on semiconductor diodes
with charge accumulation are used to produce pulses in the nanosecond range.
An equation is derived which is used as a basis for determining the con-
ditions for producing a transition without oscillations. Bibliography of
two titles. N. S.

1/1

USSR   UDC: 621.318.435.3

GORYACHEV, N. P., KOBLENTS, Ya. G., MORSHAKOV, V. A., RABKIN, L. I.,
EPSHTEYN, B. Sh., YAKOVLENKO, D. A.

"A Noncontact, Magnetically Controlled Diode"

V sb. Novyye beskontaktn. elektron. ustroystva. Ch. 1 (New Noncontact Elec-
tronic Devices--collection of works. Part 1), Moscow, 1970, pp 26-31 (from
RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70,
Abstract No 11A26)

Translation: The authors present the characteristics and describe some
designs of ferrods whose principle of operation is analogous to that of a
transformer with magnetization. A closed ferrod on a frame core made up of
two L-shaped plates with a nonferromagnetic gap has low scatter of the output
characteristics and high sensitivity. A ferrod designed on the basis of
using a permanent magnet has inverse characteristics. A device with similar
characteristics is a magnetically controlled diode designed around a standard
ferrite bead with rectangular hysteresis loop located in the opening of a
metallic magnetic circuit. Six illustrations, bibliography of four titles.
Yu. Kh.

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